Fl: January.

Fr: September.

The materials collected from an evergreen forest near the Amboli-Chaukul border are preserved and deposited at Blatter Herbarium. (Specimens No. BGG 1050, 2628).

There is no report of this species from the present State of Maharashtra. Nor are there any specimens in Blatter Herbarium, Mumbai.

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30. *LEPTOLEJEUNEA BALANSAE* STEPH. (HEPATICAE: JUNGERMANNIALES) – A NEW RECORD OF BRYOFLORA FROM THE INDIAN MAINLAND

The Western Ghats in peninsular India – recognized as one of the richest biodiversity hotspots in the world – has been studied well for flowering plants. The Tirunelveli-Travancore hills, located at the southern end of the Western Ghats and lying in the states of Tamil Nadu and Kerala respectively, are perhaps the richest in the Western Ghats. The flowering plants, and ferns and their allies have been well documented, but lower groups remain greatly neglected. Therefore we began collecting the bryophytes of the Western Ghats of Tirunelveli and Kanyakumari districts, three years ago, with the intention of compiling an inventory. *Leptolejeunea balansae*, a folicolous liverwort, earlier known to occur only in the Andamans in India (Pande *et al.* 1957; Awasthi 1986) was recorded from the study area. A detailed description and an illustration are provided.

***Leptolejeunea balansae* Steph.** in Hedwigia 35: 105. 1896 & Sp. Hepat. 5: 377. 1913; Pandé *et al.* in J. Indian Bot. Soc. 36: 345. 1957; U.S. Awasthi in J. Indian Bot. Soc. 65: 119.1986 (Fig. 1).

Plants dioecious, folicolous, closely appressed to the substratum, 2-10 mm long, green. Leaves distant, spreading obliquely, slipper-shaped, 0.35-0.4 x 0.17-0.19 mm, entire along

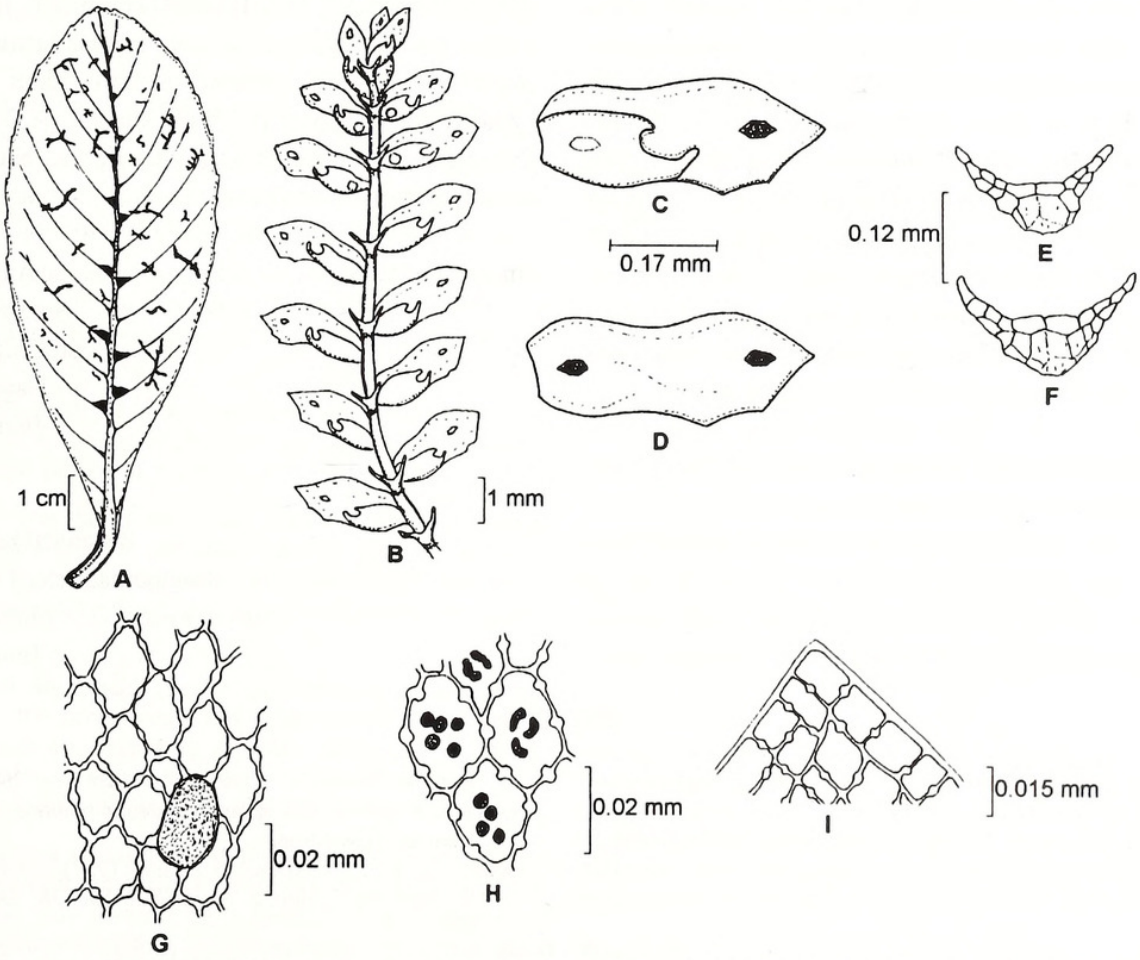

Fig. 1: *Leptolejeunea balansae* Steph.; A. Leaf showing thalli, B. Thallus with antheridia, C. Leaf with lobule showing the upper ocellus, D. Leaf without lobule showing both the ocelli, E. & F. Under leaves, G. Leaf cells with an ocellus, H. Leaf cells with oil bodies, I. leaf apex

the margins, 2-dentate towards the apex on the ventral side; marginal cells 13-15 x 14-16 µm median cells 20-22 x 16-18 µm; basal cells 23-25 x 19-21 µm; walls 3-gonous, hyaline, with nodular thickenings in between; oil bodies 2-5 per cell, rounded or elongate, 5-7 µm, granular, translucent, green; ocelli 2 per leaf; apical one *c.* 30 x 20 µm; basal one *c.* 33 x 21 µm; lobules about half as long as the leaves, toothed. Underleaves deeply 2-lobed; lobes distant, widely spreading; cells 2-seriate at the base, uniseriate above; base somewhat quadrate, *c.* 0.04 x 0.15 mm; central zone with a tuft of hyaline rhizoids. Antheridia terminal, on the main stem or lateral branches towards apex, *c.* 60 µm, light brown. Female plants not seen. (Not seen by earlier workers either, *vide* Awasthi *l.c.*).

Habitat: Grows on the upper surface of leaves of *Elaeocarpus venustus* Bedd. (Elaeocarpaceae), a large evergreen tree. *Elaeocarpus venustus* is endemic to the study area and adjoining areas in Kerala and is known by a small population (Henry and Swaminathan 1978). It has been categorized as a vulnerable (Nayar 1996) and endangered species (Gopalan and Henry 2000). We observed 10 trees in a swampy area.

Though earlier workers described *L. balansae* as folicolous, there is no mention of the host species. In the Andamans material examined by us, in one collection the host plant is a fern *Angiopteris evecta* (Forst.) Hoffm., and in the other it is a dicot *Heritiera littoralis* Dryand (Sterculiaceae), both of which are widespread. In the present study, so far, the endemic *E. venustus* is the only known host. In the first collection of about 50 leaves from a branch, only one had 31 plants, most measuring less than 6 mm. In the second collection of about 100 leaves from a branch, only one had 15 plants measuring less than 6 mm. As a result, finding the plant seems a matter of chance despite one's best efforts.

Distribution: INDIA: Andaman Islands and Tamil Nadu; Malaysia, Thailand and Vietnam (Awasthi, *l.c.*).

Note: The host leaves of the Andamans material have 110, 68 and 27 plants in an area of 60, 52 and 61 sq. cm respectively, whereas the host leaves under study harbour 33 and 3 plants in an area of 24 and 20 sq. cm respectively. This density is considerably lower than that of the Andamans specimens. The larger size of the Andamans specimens (plants measuring up to 15 mm, leaf lobes 0.48-0.64 x 0.17-0.32 mm, leaf cells 12-52 x 16-29 µm and ocelli 50-71 x 29-33 µm) is perhaps due to the higher annual rainfall and humidity in the Andamans than in the Western Ghats.

Specimens examined: India, Andaman Islands, prope Port Blair, 1895, *E.H. Man s.n.*; prope Port Blair, 1895, *E.H. Man s.n.* (G). Tamil Nadu, Kanyakumari dist., W. Ghats, Upper Kodaiyar, evergreen forests, epiphyllous on *Elaeocarpus venustus* tree, *c.* 1,250 m, 9.xi.2000, *A.E.D. Daniels* 1218; 24.viii.2001, *A.E.D. Daniels* 1802 (MH, SCCN).

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